

**“LCHS7007 - Population Health and Digital
Health Promotion”**

Table of Contents

Task 1 – Blogs	4
Blog 1 - Leveraging Digital Technology for Diabetes Management	4
Introduction	4
Addressing the Public Health Concerns	4
Using Digital Technology in Health Promotion	5
Evidence of Effectiveness	6
Critical Evaluation of Impact	6
Addressing Shortfalls	6
Conclusion	6
References	7
Blog 2 – Revolutionizing Hypertension Management - The Impact of Innovative Digital Technology	8
Introduction	8
Addressing Public Health Concerns	8
Innovative Digital Technology Design	9
Using Application in Health Promotion	9
Impact of the Application in Health Promotion	10
Addressing Shortfalls	10
Conclusion	11
References	11
Task 2 Poster Design	12
Background	12
Health Promotion values and Principles	13
Behavior Change Theory	14
Behavior Change Theory Transtheoretical Model (TTM)	14
TTM five stages of change	14
Expected Outcomes	16

Conclusion.....	17
References.....	18

List of Figures

Figure 1 Monitoring Diabetes through Technology usage.....	4
Figure 2 Public Health Concerns.....	5
Figure 3 Digital Technology in Health Promotion	5
Figure 4 Addressing Shortfalls	6
Figure 5 Innovation in Blood Pressure	8
Figure 6 BP Monitoring Applications	9
Figure 7 Application usage in Health Promotion	9
Figure 8 Impact of Application in Health Promotion	10
Figure 9 Behavior Change Theory Transtheoretical Model (TTM)	14

Task 1 – Blogs

Blog 1 - Leveraging Digital Technology for Diabetes Management

Introduction

Diabetes is a prevalent public health issue that is very common across the globe and it needs innovative solutions. Digital technology came as a core significant tool in the health sector promotion interventions that innovate diabetes management (Ye et al., 2020).

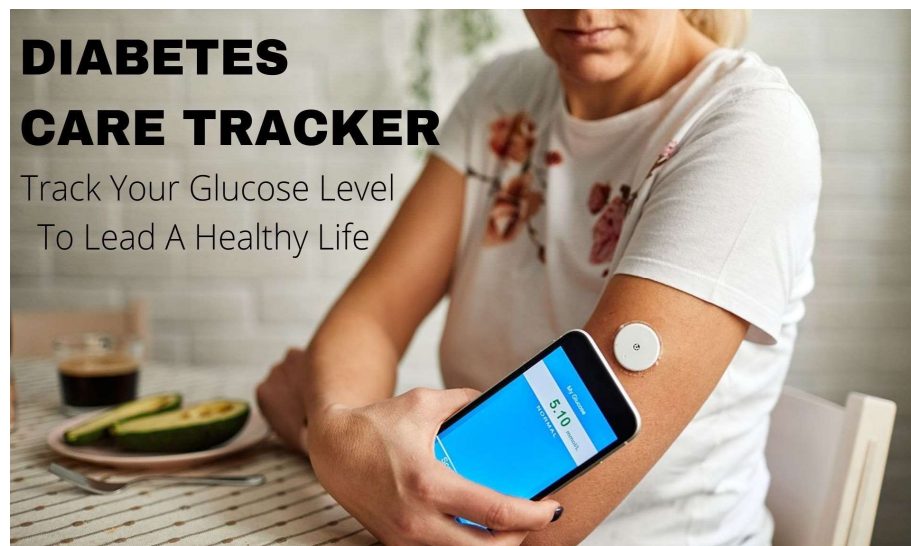


Figure 1 Monitoring Diabetes through Technology usage

Addressing the Public Health Concerns

Diabetes affects millions across the globe and poses severe health risks which include cardiovascular diseases as well as kidney failure. As per recent statistics available from the World Health Organization, on around for about 422 million adults live with diabetes across the world, having its numbers rising alarmingly (Tarumi et al., 2021).

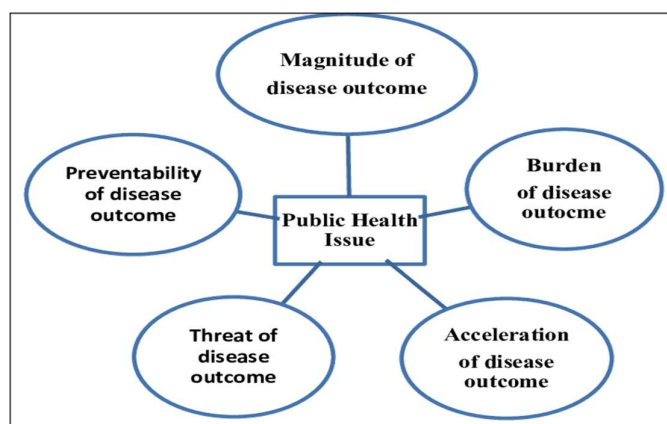


Figure 2 Public Health Concerns

Using Digital Technology in Health Promotion

Digital technology just like mobile applications along with wearable devices like tech gadgets, facilitates every single individual, especially the ones who are affected by diabetes to manage diabetes efficiently. These tools provide the real-time monitoring of blood glucose levels, dietary tracking as well as personalized exercise routines and also support growing self-management and patient empowerment (Najafi et al., 2020).

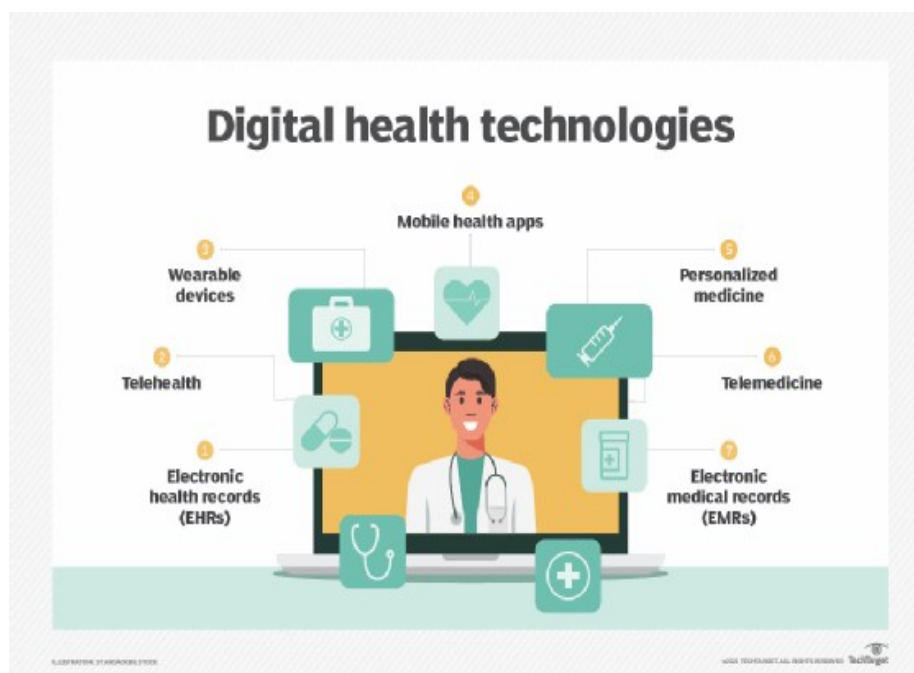


Figure 3 Digital Technology in Health Promotion

Evidence of Effectiveness

Several studies focused on the efficacy of digital interventions in diabetes management. Research by the American Diabetes Association shows a core significant enhancement in glycemic control between certain specific individuals using mobile health applications as compared to conventional methods (Ye et al., 2020)

Critical Evaluation of Impact

Whereas digital technology provides promising methods for solutions, challenges exist. Issues of accessibility, affordability as well as usability barrier in large-scale adoption. Concerns with relevancy to data privacy and security also raise ethical dilemmas, which affect user trust and engagement (Najafi et al., 2020).

Addressing Shortfalls

In dealing with these challenges, certain collaborative efforts between the stakeholders are very much imperative (Aerts et al., 2021). Policymakers must focus on investments in digital health infrastructure which ensures equitable access. Strict regulations protecting user data as well as also promoting transparency are indispensable for developing the trust and adherence (Isaacs et al., 2020).



Figure 4 Addressing Shortfalls

Conclusion

Digital technology shows the unparalleled opportunities in diabetes management, yet its full potential creating barrier on fixing the current shortcomings. Facilitating with the innovation, collaboration along with certain ethical practices, Smoothing the way for a better future in which the digital health interventions efficiently deal with the diabetes as well as the other public health challenges efficiently with the help and adoption of the technology and innovation.

References

Aerts, A. and Bogdan-Martin, D., 2021. Leveraging data and AI to deliver on the promise of digital health. *International Journal of Medical Informatics*, 150, p.104456.

Isaacs, D., Cox, C., Schwab, K., Oser, T.K., Rinker, J., Mason, M.J., Greenwood, D.A. and Albanese-O'Neill, A., 2020. Technology integration: the role of the diabetes care and education specialist in practice. *The Diabetes Educator*, 46(4), pp.323-334.

Najafi, B., Reeves, N.D. and Armstrong, D.G., 2020. Leveraging smart technologies to improve the management of diabetic foot ulcers and extend ulcer-free days in remission. *Diabetes/metabolism research and reviews*, 36, p.e3239.

Tarumi, S., Takeuchi, W., Chalkidis, G., Rodriguez-Loya, S., Kuwata, J., Flynn, M., Turner, K.M., Sakaguchi, F.H., Weir, C., Kramer, H. and Shields, D.E., 2021. Leveraging artificial intelligence to improve chronic disease care: methods and application to pharmacotherapy decision support for type-2 diabetes mellitus. *Methods of Information in Medicine*, 60(S 01), pp.e32-e43.

Ye, J., Wang, Z. and Hai, J., 2022. Social networking service, patient-generated health data, and population health informatics: national cross-sectional study of patterns and implications of leveraging digital technologies to support mental health and well-being. *Journal of medical Internet research*, 24(4), p.e30898.

Blog 2 – Revolutionizing Hypertension Management - The Impact of Innovative Digital Technology

Introduction

Hypertension is one of the most alarming diseases which stands as a silent killer, and affects millions across the globe with its dire health issues (Funes et al., 2024). To deal with this pressing public health issue, certain sorts of innovative digital technology came as a game-changer in health promotion interventions (Hare et al., 2021).



Figure 5 Innovation in Blood Pressure

Addressing Public Health Concerns

Hypertension which is characterized by elevated blood pressure levels, specifically increases the core significant risk of heart disease, stroke and kidney failure. As per the World Health Organization, hypertension affects an average of about 1.13 billion people across the globe, making it a significant health concern matter (Minuz et al., 2023).

Innovative Digital Technology Design

Introducing the mobile Application which is an important digital technology designed to innovate and revolutionize hypertension management. This application is a comprehensive mobile application equipped with certain AI-powered algorithms, personalized health-tracking features and having real-time monitoring capabilities of blood pressure (Hare et al., 2021).



Figure 6 BP Monitoring Applications

Using Application in Health Promotion

This mobile application technology empowers every single individual to manage their hypertension proactively. Users can easily track their blood pressure readings and note them in the mobile app database which also gives certain personalized dietary suggestions, and provides accessibility to educational resources on lifestyle modifications (Hare et al., 2021). The app also provides seamless communication with healthcare providers, growing the collaborative approach to care.

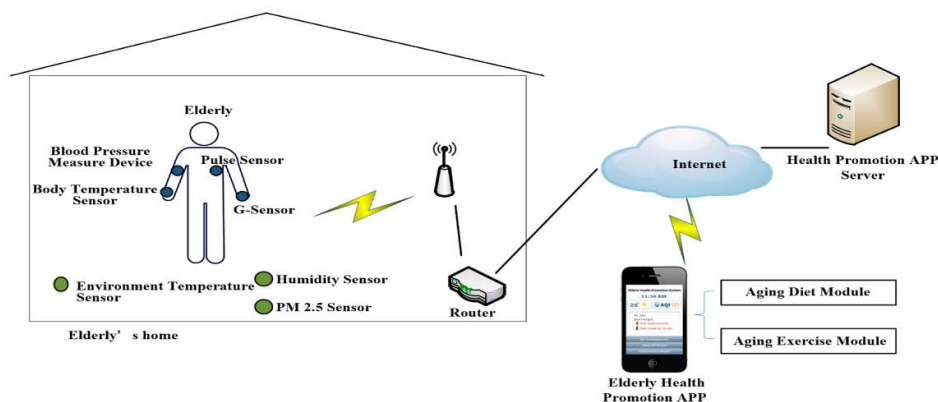


Figure 7 Application usage in Health Promotion

Impact of the Application in Health Promotion

The advantages of the application are manifold. Its user-friendly interface as well as the personalized features boosts patient engagement and adherence to treatment instructions. Real-time monitoring ability allows the patient for any sort of early detection of fluctuations in their blood pressure, providing timely interventions as well as preventing certain sort of issues (Minuz et al., 2023).

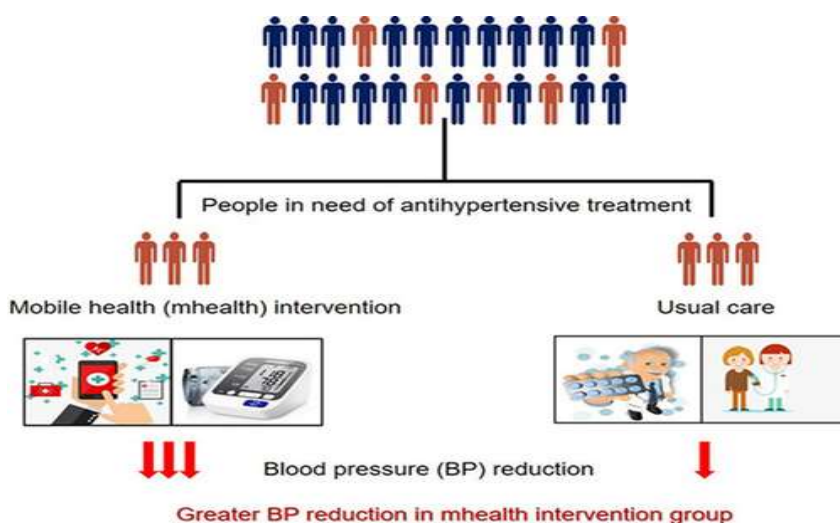


Figure 8 Impact of Application in Health Promotion

Moreover, there are certain challenges exist. Accessibility, as well as affordability barriers, might limit the reach of application, specifically in the low living areas populations. Concerns arise regarding the data privacy and security need for strict protection to protect user information and uphold trust (Padwal et al., 2021).

Addressing Shortfalls

In managing these sorts of issues, a multi-faceted approach is required. Collaboration with significant healthcare organizations as well as policymakers might provide the integration of the application to current healthcare systems which ensures the easily access. Inducting robust data encryption protocols along with compliance with regulatory standards are necessary to protect user privacy as well as it also boost trust (Suryadevara et al., 2023).

Conclusion

The mobile application for monitoring hypertension exemplifies the transformative potential of digital technology in hypertension management as well as health promotion. Rectifying the noted current shortcomings through collaboration, and innovation along with certain ethical practices to manage the gaps and issues, The mobile application smooth the way for the future in which every single individual can easily and efficiently manage hypertension and also enhance their overall health outcomes.

References

Funes Hernandez, M., Babakhanian, M., Chen, T.P., Sarraju, A., Seninger, C., Ravi, V., Azizi, Z., Tooley, J., Chang, T.I., Lu, Y. and Downing, N.L., 2024. Design and Implementation of an Electronic Health Record-Integrated Hypertension Management Application. *Journal of the American Heart Association*, 13(2), p.e030884.

Hare, A.J., Chokshi, N. and Adusumalli, S., 2021. Novel digital technologies for blood pressure monitoring and hypertension management. *Current Cardiovascular Risk Reports*, 15(8), p.11.

Minuz, P., Albin, F.L., Imbalzano, E., Izzo, R., Masi, S., Pengo, M.F., Pucci, G., Scalise, F., Salvetti, M., Tocci, G. and Cicero, A., 2023. Telemedicine and digital medicine in the clinical management of hypertension and hypertension-related cardiovascular diseases: a position paper of the Italian Society of Arterial Hypertension (SIIA). *High Blood Pressure & Cardiovascular Prevention*, 30(5), pp.387-399.

Padwal, R. and Wood, P.W., 2021. Digital health approaches for the assessment and optimisation of hypertension care provision. *Canadian Journal of Cardiology*, 37(5), pp.711-721.

Suryadevara, C.K., 2023. Revolutionizing dietary monitoring: a comprehensive analysis of the innovative mobile app for tracking dietary composition. *International Journal of Innovations in Engineering Research and Technology*, 10(88).

Task 2 Poster Design

Background

Hypertension which is sometimes known as the "silent killer," shows a great public health challenge all across the globe. With approximately of about 1.13 billion individuals affected globally (Araya et al., 2021), hypertension increases the risk of heart disease, stroke, and other deadly life-threatening issues. Its prevalence focuses on the urgent need for effective interventions to stop its effects as well as also enhance and improve population health outcomes (Etminani et al., 2020). Certain public health interventions for hypertension have employed a sort of combination of digital and non-digital approaches. Traditional interventions mainly involve community-based health education programs, blood pressure screenings in primary care settings along with lifestyle modification counseling. These efforts are targeted to raise awareness, which also promotes healthy behaviors as well as provides early detection and management of hypertension (Kario et al., 2022).

In current years Digital health interventions have emerged as promising tools in hypertension management and other health issues as well. Examples involve mobile applications for blood pressure monitoring, telemedicine platforms for remote consultations as well as wearable devices for proper health tracking (Kario et al., 2021). These digital solutions provide an easy way convenient customized support with a user user-friendly interface as well as real-time data insights boosting patient engagement and self-management abilities. One of the such digital health interventions discussed in Part A is the development of a mobile application software that facilitates for hypertension patients. This app is a comprehensive mobile application which is designed to facilitate and empower every single individual in managing hypertension effectively. It's Equipped with AI-powered algorithms along with eth personalized health tracking features, the application also provides real-time monitoring of blood pressure levels, facilitates personalized dietary suggestions, and gives easy access to educational resources on lifestyle modifications. Its user-friendly interface and easy way of communicating with healthcare providers make it a valuable tool for enhancing hypertension awareness and management in the treatment process (Etminani et al., 2020).

Health Promotion values and Principles

Health promotion values along with the principles deals as proficient guide frameworks for designing as well as implementing the interventions targeted at enhancing the population health results. These values and principles focuses over the certain domains, which includes equity, empowerment, participation as well as the sustainability. Equity falls at the core of health promotion, focusing over the significance of fair and equal accessibility to resources and opportunities for health. It also provides support for addressing social determinants of health and minimizing the health disparities between diverse population groups (Kario et al., 2021). Empowerment includes the growing individuals' autonomy, and self-efficacy as well as the capacity to create the informed decisions for the health. It includes the providing resources, skills as well as certain support systems that allows the individuals to take over the control of their health and well-being (Santo et al., 2020). Participation focuses on the involvement of communities as well as the stakeholders in the planning and evaluation of health promotion initiatives (Kario et al., 2022).

Digital health technology just like the mobile application developed is very much aligned with health promotion values and principles in certain ways. Firstly, these applications promote equity by facilitating accessible and affordable tools for hypertension management, regardless of a certain geographical location or socioeconomic status. Its an easy user-friendly interface as well as personalized features deal with diverse user needs which also ensures inclusivity (Etminani et al., 2020). These applications also facilitate certain empowerment by empowering every single individual to properly engage in their health management journey. Through real-time monitoring along with educational resources, the application also equips users with the knowledge and tools to create informed decisions regarding their health and lifestyle choices (Khoong et al., 2021). The application also provides participation by growing the collaborative connection between users and healthcare providers. Allowing seamless communication and data sharing, the application also encourages shared decision-making and personalized care approaches which also promotes a sense of ownership and accountability between users (McBride et al., 2020).

The application also demonstrates sustainability by getting advantages with digital technology to deliver scalable as well as adaptable innovations. Its cloud-based

infrastructure along with the continuous updates make sure that the app is responsive to the evolving user needs along with the healthcare innovations, thereby increasing its long-term effect on population health (Padwal et al., 2021).

Behavior Change Theory

Behavior Change Theory Transtheoretical Model (TTM)

Behavior change theories facilitate valuable frameworks for understanding as well as affecting health-related behaviors. The prominent theory sometimes applied in digital health interventions is the Transtheoretical Model (TTM), which is also known as the Stages of Change model. Developed by Prochaska and DiClemente in the late 1970s, the TTM posits that behavior change is a procedure that occurs as far as time passes, including the distinct stages by which individuals progress (Fadilazim et al., 2023).



The Transtheoretical Model of Behavior Change

Figure 9 Behavior Change Theory Transtheoretical Model (TTM)

TTM five stages of change

1. **Precontemplation:** Individuals are not considering the behavior change and they might be unaware of the need for the change.
2. **Contemplation:** Certain Individuals identify the need for change but might be

ambivalent or uncertain about taking the required action.

3. **Preparation:** Individuals are very much actively preparing to change their behavior and might start taking small steps for the behavior change.
4. **Action:** Individuals have also initiated certain behavior changes and are properly modifying their behavior to achieve their goals (Fadilazim et al., 2023).
5. **Maintenance:** Individuals have properly changed their behavior and are working to maintain these changes over the long term.

The TTM also acknowledges the possibility of relapse in which individuals might also revert to past behaviors which promotes a reevaluation of their readiness to change. In the context of digital health interventions, the TTM informs for the design as well as the implementation of strategies targeted at providing behavior change and promoting health results. Firstly, the TTM focuses on the significance of tailoring interventions to specific individuals' readiness for the change. Digital technologies like mobile applications can assess user's stage of change by interactive assessments or self-reported data. Getting to know the user's readiness to change, interventions might provide personalized interventions tailored to their specific requirements as well as motivations (Fadilazim et al., 2023). Secondly, the TTM focuses on the significance of facilitating the support and resources at each stage of the behavior change procedure. Digital health interventions might also provide certain features like goal-setting tools, progress tracking, and reminders along with educational content, to support individuals as they progress through the stages of change.

The TTM focuses over the significance of addressing barriers as well as also promoting self-efficacy to provide successful behavior change. Digital health interventions can employ strategies like social support networks and behavior-tracking tools to boost up the users' confidence along with their motivation (McBride et al., 2020). These applications may also incorporate social features that allow the users to connect with peers for encouragement and accountability, while challenges as well as rewards incentivize adherence to healthy behaviors. It is necessary to acknowledge the limitations of behavior change theories which mainly involve the TTM, in predicting and explaining individual behavior change (Fadilazim et al., 2023).

Behavior change theories like the Transtheoretical Model provides the valuable frameworks for designing effective digital health interventions which also promote behavior change as well as it enhance health results. Dealing with interventions to individuals' readiness for the change, facilitating the comprehensive support through the stages of change, as well as also addressing certain sort of barriers to behavior change, digital technologies have the potential to facilitate the individuals to develop sustainable improvements in their health and well-being (McManus et al., 2021).

Expected Outcomes

Getting the advantage from the Transtheoretical Model (TTM) to provide digital health intervention for hypertension management, certain expected results can be anticipated. Firstly, the developed approach which is guided by the TTM is expected to boost user engagement as well as adherence to the intervention (Moschonis et al., 2023). Aligning intervention strategies with users' stage of change can facilitate personalized support as well as the resources that resonate with individuals' motivations and needs, thereby increasing their commitment to behavior change (Oh et al., 2022). Secondly, the TTM's focus on progress monitoring as well as relapse prevention is very much expected to provide sustained behavior change over time. The application features self-monitoring, and goal-setting along with feedback which empower users to trace their progress, identify areas for improvement, and implement strategies to prevent setbacks, fostering long-term adherence to healthy behaviors (Padwal et al., 2021).

The application of the Transtheoretical Model in providing the digital health intervention is expected to result in improved hypertension management outcomes, which involves better blood pressure control, minimized risk of complications as well as enhanced overall health and well-being for individuals using the intervention (Redfern et al., 2020).

Conclusion

The induction of digital technology interventions like the development of purpose build applications for hypertension management has profound implications for policies, education as well as research in public health. Policy-wise, there's a pressing need for frameworks supporting the integration of digital health solutions into healthcare systems, ensuring equitable access, and safeguarding user data privacy. Educationally, these interventions provide opportunities to boost health literacy and evidence-based information and empower individuals to develop informed health decisions. Integrating digital health literacy into education is critical for healthcare professionals.

Research-wise evaluation is core significant to assess the effectiveness of digital technologies, identify best practices as well as also address emerging issues. Research efforts must focus on examining disparities in access, and utilization as well as the results among diverse populations which is participating in the innovation of equitable healthcare delivery. Embracing digital technology interventions has far-reaching implications in developing policies to support the integration boosting health education as well as driving research agendas ahead. These types of efforts collectively target to enhance the population's health results as well as also grow more inclusive and effective healthcare systems.

References

Araya, R., Menezes, P.R., Claro, H.G., Brandt, L.R., Daley, K.L., Quayle, J., Diez-Canseco, F., Peters, T.J., Cruz, D.V., Toyama, M. and Aschar, S., 2021. Effect of a digital intervention on depressive symptoms in patients with comorbid hypertension or diabetes in Brazil and Peru: two randomized clinical trials. *Jama*, 325(18), pp.1852-1862.

Etminani, K., Tao Engström, A., Göransson, C., Sant'Anna, A. and Nowaczyk, S., 2020. How behavior change strategies are used to design digital interventions to improve medication adherence and blood pressure among patients with hypertension: systematic review. *Journal of Medical Internet Research*, 22(4), p.e17201.

Fadilazim, D., 2023. *The Effectiveness of a Personalized Digital Health Intervention Plan (Naluri App) on Clinical and Psychological Outcomes Among Cardiac Patients at The National Heart Institute (IJN): A Randomized Controlled Trial* (Doctoral dissertation, Royal College of Surgeons in Ireland).

Kario, K., Harada, N. and Okura, A., 2022. Digital therapeutics in hypertension: evidence and perspectives. *Hypertension*, 79(10), pp.2148-2158.

Kario, K., Nomura, A., Kato, A., Harada, N., Tanigawa, T., So, R., Suzuki, S., Hida, E. and Satake, K., 2021. Digital therapeutics for essential hypertension using a smartphone application: A randomized, open-label, multicenter pilot study. *The Journal of Clinical Hypertension*, 23(5), pp.923-934.

Khoong, E.C., Olazo, K., Rivadeneira, N.A., Thatipelli, S., Barr-Walker, J., Fontil, V., Lyles, C.R. and Sarkar, U., 2021. Mobile health strategies for blood pressure self-management in urban populations with digital barriers: systematic review and meta-analyses. *NPJ digital medicine*, 4(1), p.114.

McBride, C.M., Morrissey, E.C. and Molloy, G.J., 2020. Patients' experiences of using smartphone apps to support self-management and improve medication adherence in hypertension: qualitative study. *JMIR mHealth and uHealth*, 8(10), p.e17470.

McManus, R.J., Little, P., Stuart, B., Morton, K., Raftery, J., Kelly, J., Bradbury, K., Zhang, J., Zhu, S., Murray, E. and May, C.R., 2021. Home and Online Management

and Evaluation of Blood Pressure (HOME BP) using a digital intervention in poorly controlled hypertension: randomised controlled trial. *bmj*, 372.

Moschonis, G., Siopis, G., Jung, J., Eweka, E., Willems, R., Kwasnicka, D., Asare, B.Y.A., Kodithuwakku, V., Verhaeghe, N., Vedanthan, R. and Annemans, L., 2023. Effectiveness, reach, uptake, and feasibility of digital health interventions for adults with type 2 diabetes: a systematic review and meta-analysis of randomised controlled trials. *The Lancet Digital Health*, 5(3), pp.e125-e143.

Oh, S.W., Kim, K.K., Kim, S.S., Park, S.K. and Park, S., 2022. Effect of an integrative mobile health intervention in patients with hypertension and diabetes: crossover study. *JMIR mHealth and uHealth*, 10(1), p.e27192.

Padwal, R. and Wood, P.W., 2021. Digital health approaches for the assessment and optimisation of hypertension care provision. *Canadian Journal of Cardiology*, 37(5), pp.711-721.

Redfern, J., Coorey, G., Mulley, J., Scaria, A., Neubeck, L., Hafiz, N., Pitt, C., Weir, K., Forbes, J., Parker, S. and Bampi, F., 2020. A digital health intervention for cardiovascular disease management in primary care (CONNECT) randomized controlled trial. *NPJ digital medicine*, 3(1), p.117.

Santo, K. and Redfern, J., 2020. Digital health innovations to improve cardiovascular disease care. *Current Atherosclerosis Reports*, 22, pp.1-10.

Steinman, L., van Pelt, M., Hen, H., Chhorvann, C., Lan, C.S., Te, V., LoGerfo, J. and Fitzpatrick, A.L., 2020. Can mHealth and eHealth improve management of diabetes and hypertension in a hard-to-reach population?—lessons learned from a process evaluation of digital health to support a peer educator model in Cambodia using the RE-AIM framework. *Mhealth*, 6.

Stogios, N., Kaur, B., Huszti, E., Vasanthan, J. and Nolan, R.P., 2020. Advancing digital health interventions as a clinically applied science for blood pressure reduction: a systematic review and meta-analysis. *Canadian Journal of Cardiology*, 36(5), pp.764-774.

Xu, H. and Long, H., 2020. The effect of smartphone app-based interventions for patients with hypertension: systematic review and meta-analysis. *JMIR mHealth and uHealth*, 8(10), p.e21759.

Poster Design

POSTER DESIGN - REVOLUTIONIZING HYPERTENSION MANAGEMENT - THE IMPACT OF INNOVATIVE DIGITAL TECHNOLOGY

BACKGROUND

Hypertension (HTN) is sometimes known as the "silent killer" shows a great public health challenge. All across the globe with approximately of about 1.1 billion individuals affected globally (Javala et al., 2021). Hypertension increases the risk of heart disease, stroke, and other deadly life-threatening issues. The prevalence focuses on the urgent need for effective interventions to stave off effects as well as also enhance and improve population health outcomes (Stratman et al., 2020). Current public health interventions for hypertension have employed a sort of combination of digital, non-digital, approaches. Traditional interventions mainly involve community-based health education programs, blood pressure screening in primary care settings along with lifestyle modification counseling. These efforts are targeted to raise awareness, which also promotes healthy behaviors as well as provides early detection and management of hypertension (Kumar et al., 2020). Current, however, digital health interventions have emerged as promising tools in hypertension management and other health issues as well. Examples include mobile applications for blood pressure monitoring, telemedicine platforms for remote consultations as well as wearable devices for proper health tracking (Javala et al., 2021). These digital solutions provide an easy and convenient customized support with a user-friendly interface as well as real-time data analyses boosting patient engagement and self-management abilities. One of the such digital health interventions described in part A is the development of a mobile application software that facilitates for hypertension patients. This app is comprehensive mobile application which is designed to motivate and empower every single individual in managing hypertension effectively. It's equipped with numerous algorithmic along with 10th personalized health tracking features. The application also provides real-time monitoring of blood pressure levels, facilitates personalized dietary suggestions, and gives easy access to educational resources on lifestyle modifications. It's user-friendly interface and easy way of communicating with healthcare providers make it a valuable tool for enhancing hypertension awareness and management in the treatment process (Stratman et al., 2020).

HEALTH PROMOTION AND PRINCIPLE

Health promotion values along with the principles deals as prominent guide frameworks for designing as well as implementing interventions targeted at enhancing the population health results. These values and principles focuses over the certain domains which includes equity, empowerment, participation as well as the sustainability. Equity falls at the core of health promotion focuses over the significance of fair and equal accessibility to resources and opportunities for health. It also provides support for addressing social determinants of health and bridging the health disparities between various population groups (Javala et al., 2021). Furthermore, it includes the growing individual autonomy and self-efficacy as well as the capacity to create the informed decisions for the health. It includes the promoting resources skills as well as certain support systems that allows the individuals to take over the control of their health and well-being (Javala et al., 2020). Furthermore, it focuses on the involvement of communities as well as the engagement in the planning and evaluation of health promotion initiatives (Javala et al., 2020). Digital health technology just like the mobile application developed is very much aligned with health promotion values and principles in certain ways. Firstly, these applications promote equity by facilitating accessible and affordable tools for hypertension management regardless of a person's geographical location or socioeconomic status. It's an easy-to-use friendly interface as well as personalized features deal with diverse user needs which also helps accessibility (Stratman et al., 2020). These applications also facilitate continuous empowerment by empowering every single individual to properly manage in their health management journey. Through real-time monitoring along with educational resources, the application also deals along with the knowledge and tools to create informed decisions regarding their health and lifestyle choices (Stratman et al., 2021). The application also promotes participation by offering

HEALTH PROMOTIONS VALUES AND PRINCIPLES

The collaborative connection between users and healthcare providers allowing seamless communication and data sharing. The application also encourages shared decision-making and personalized care approaches which also promotes a sense of ownership and accountability between users (Javala et al., 2020).

BEHAVIOR CHANGE THEORY

The application also demonstrates sustainability by getting advantages with digital technology to deliver scalable as well as adaptable innovations. Its cloud-based infrastructure along with the continuous updates make sure that the app is responsive to the growing user needs along with the healthcare innovations, thereby increasing its long-term impact on population health (Javala et al., 2021).

BEHAVIOR CHANGE THEORY

Behavior change theories facilitate valuable frameworks for understanding as well as affecting health-related behaviors. The prominent theory sometimes applied in digital health interventions is the transtheoretical model (TTM), which is also known as the stages of change model. Developed by Prochaska and DiClemente in the late 1980s, the TTM posits that behavior change is a procedure that occurs as far as time passes, including the distinct stages by which individuals progress (Prochaska et al., 2020).

THE FIVE STAGES OF CHANGE

PRECONTEMPLATION: Individuals are not considering the behavior change and they might be unaware of the need for the change.

CONTEMPLATION: Certain individuals identify the need for change but might be ambivalent or uncertain about taking the required action.

PREPARATION: Individuals are very much actively preparing to change their behavior and might start taking small steps for the behavior change.

ACTION: Individuals have also initiated certain behavior changes and are prepared to adopting their behavior to achieve their goals (Prochaska et al., 2020).

MAINTENANCE: Individuals have properly changed their behavior and are prepared to maintain these changes over the long term.



The Transtheoretical Model of Behavior Change

EXPECTED OUTCOMES

Getting the advantage from the transtheoretical model (TTM) to provide digital health intervention for hypertension management, certain expected results can be anticipated. Firstly, the designed approach which is guided by the TTM expected to boost user engagement as well as adherence to the intervention interventions (Javala et al., 2021). Adopting intervention strategies with users' stage of change can facilitate personalized support as well as the resources that resonate with individuals' motivations and needs, further increasing their commitment to behavior change (Javala et al., 2020). Secondly, the TTM focus on process monitoring as well as relapse prevention is very much expected to provide sustained behavior change over time. The application features self-monitoring and goal setting along with feedback which empowers users to track their progress, identify areas for improvement, and implement strategies to prevent setbacks, fostering long-term adherence to healthy behaviors (Javala et al., 2021). The application of the transtheoretical model in providing the digital health intervention is expected to result in improved hypertension management outcomes, which involves better blood pressure control, lowered risk of complications along with enhanced overall health and well-being for individuals using the intervention (Javala et al., 2020).

CONCLUSION

The inclusion of digital technology into healthcare has the development of purpose-built applications for hypertension management has profound implications for policies, education as well as research in public health practice. There's a pressing need for frameworks supporting the provision of digital health solutions into healthcare systems, ensuring equitable access, and empowering user data privacy. Collectively, these innovations provides opportunities to boost health literacy and evidence-based information and empower individuals to develop informed health decisions. Integrating digital health literacy into education is critical for healthcare professionals. Research and evaluation is core important to assess the effectiveness of digital health solutions, identify their practices as well as also address emerging issues. Research efforts must focus on evaluating barriers

in access and utilization as well as the results among diverse populations which is informing in the provision of equitable healthcare delivery. Embracing digital technology revolutionizes the way reaching implications in developing policies to support the integration boosting health education as well as driving research agendas ahead. These types of efforts collectively targeted to enhance the population's health results as well as also drive more inclusive and effective healthcare systems.

REFERENCES

JAVALA, H., MANEJES, P.R., CLARK, H.S., SPINNEY, L.R., DALEY, K.L., QUARLES, L., DEB CARMONA, P., PETERS, T.L., CRUZ, D.V., STANLEY, M. AND ADAMS, R., 2021. EFFECT OF A DIGITAL INTERVENTION ON BLOOD PRESSURE IN PATIENTS WITH COMORBID HYPERTENSION AND DIABETES IN INDIAN AND PERU. 20th INTERNATIONAL CONGRESS OF PHARMACY, 2021, 182.

STRATMAN, K., TAO, GONZALEZ, A., GONZALEZ, C., SANTANA, S. AND KOWALCZYK, S., 2020. HOW BEHAVIOR CHANGE STRATEGIES ARE USED TO DESIGN DIGITAL INTERVENTIONS TO IMPROVE MEDICATION ADHERENCE AND BLOOD PRESSURE: MAKING SENSE WITH HYPERTEENSION. SYSTEMATIC REVIEW. JOURNAL OF MEDICAL TRIALS, 15(1), 1-10.

PROCHASKA, J.M., 2021. THE EFFECTIVENESS OF A PERSONALIZED DIGITAL HEALTH INTERVENTION PLAN (VALOR) AND ON CHANGE AND PSYCHOLOGICAL OUTCOMES AMONG CANCER PATIENTS AT THE NATIONAL RADIATION ONCOLOGY CARCINOMA CONTROLLED TRIAL. DOCTORAL DISSERTATION, RUTGERS COLLEGE OF SOUTHERN NEW JERSEY.

KARRO, K., HARADA, N. AND OHTSUKA, A., 2022. DIGITAL INTERVENTIONS IN HYPERTENSION: EVIDENCE AND PERSPECTIVES. HYPERTENSION, 79(1), 112-120.

KARRO, K., NAKAMURA, A., KATO, A., HARADA, N., TANIHARA, T., KATO, K., SUZUKI, S., HATA, E. AND HARADA, K., 2021. DIGITAL INTERVENTIONS FOR HYPERTENSION USING A SMARTPHONE APPLICATION: A RANDOMIZED, OPEN-LABEL, MULTICENTER PILOT STUDY. THE JOURNAL OF CLINICAL HYPERTENSION, 29(1), 102504.

PROCHASKA, J.M., CLARK, H.S., PROCHASKA, N.A., THOMPSON, S., BARR, W.A., JONES, V., LYLES, C.M. AND SARKIS, L., 2021. DIGITAL HEALTH STRATEGIES FOR BLOOD PRESSURE SELF-MANAGEMENT IN URBAN POPULATIONS WITH DIGITAL BARRIERS: SYSTEMATIC REVIEW AND META-ANALYSIS. JAMA, 325(1), 1-14.

MCNEIL, C.M., MURPHY, E.C. AND MULLIGY, E.J., 2020. PATIENT EXPERIENCES OF USING SMARTPHONE APPS TO SUPPORT SELF-MANAGEMENT AND IMPROVE MEDICATION ADHERENCE IN HYPERTENSION: QUALITATIVE STUDY. JOURNAL OF MEDICAL TRIALS, 15(1), 1-10.

MCNEIL, C.M., LITTLE, R., STUART, R., MURPHY, E., RAYFIELD, J., KELLY, J., SACKBURY, K., DAVIS, J., ZHANG, L., MURPHY, E. AND MUIR, C.R., 2021. HOME AND ONLINE MANAGEMENT AND EVALUATION OF BLOOD PRESSURE USING A PERSONALIZED DIGITAL INTERVENTION IN PEOPLE WITH HYPERTENSION: A RANDOMIZED CONTROLLED TRIAL. BMJ, 372.

MCNEIL, C.M., BLOOM, D., JUNG, J., DAVIS, E., KELLEY, R., KAWANAKA, D., HARRIS, B.A., KOTCHIKAWA, V., KAWANAKA, N., KAWANAKA, R. AND KAWANAKA, L., 2021. EFFECTIVENESS, REACH, UPTAKE, AND FEASIBILITY OF DIGITAL HEALTH INTERVENTIONS FOR ADULTS WITH TYPE 2 DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS. THE LANCET DIGITAL HEALTH, 5(1), 115-124.

DI, S.H., HAN, K.K., KIM, S.S., PARK, S.H. AND PARK, S., 2022. EFFECT OF AN INTEGRATIVE MOBILE HEALTH INTERVENTION IN PATIENTS WITH HYPERTENSION AND DIABETES. CHRONIC DISEASE, 18(1), 1-10.

PROCHASKA, J.M. AND DI CLEMENTE, K.C., 2020. DIGITAL HEALTH APPROACHES FOR THE ASSESSMENT AND OPTIMIZATION OF HYPERTENSION CARE. JOURNAL OF CLINICAL HYPERTENSION, 28(1), 102501.

PROCHASKA, J.M., COOPER, C., MULLIGY, E., SPINNEY, L., HATA, E., KATO, K., FORBES, J., WATERS, S. AND ADAMS, R., 2021. DIGITAL HEALTH INTERVENTIONS FOR CARDIOVASCULAR DISEASE MANAGEMENT IN PRIMARY CARE: A SYSTEMATIC REVIEW AND META-ANALYSIS. JAMA, 325(1), 1-10.

STRATMAN, K., VAN HILT, N., HILL, N., CHANDRAN, C., LIAO, C.S., YE, V., LOPEZ, J. AND HENDRICKS, A.L., 2021. CAN HEALTHY AND HEALTHY APPROACH MANAGEMENT OF DIABETES AND HYPERTENSION IN A HARD-TO-REACH POPULATION—LESSONS LEARNED FROM A PREVIOUS EVALUATION OF DIGITAL HEALTH TO SUPPORT ADHESION EDUCATION. JAMA, 325(1), 1-10.

PROCHASKA, J.M., BLOOM, D., JUNG, J., DAVIS, E., KELLEY, R., KAWANAKA, D., HARRIS, B.A., KOTCHIKAWA, V., KAWANAKA, N., KAWANAKA, R. AND KAWANAKA, L., 2021. EFFECTIVENESS, REACH, UPTAKE, AND FEASIBILITY OF DIGITAL HEALTH INTERVENTIONS FOR ADULTS WITH TYPE 2 DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS. THE LANCET DIGITAL HEALTH, 5(1), 115-124.

MCNEIL, C.M., LITTLE, R., STUART, R., MURPHY, E., RAYFIELD, J., KELLY, J., SACKBURY, K., DAVIS, J., ZHANG, L., MURPHY, E. AND MUIR, C.R., 2021. HOME AND ONLINE MANAGEMENT AND EVALUATION OF BLOOD PRESSURE USING A PERSONALIZED DIGITAL INTERVENTION IN PEOPLE WITH HYPERTENSION: A RANDOMIZED CONTROLLED TRIAL. BMJ, 372.

MCNEIL, C.M., BLOOM, D., JUNG, J., DAVIS, E., KELLEY, R., KAWANAKA, D., HARRIS, B.A., KOTCHIKAWA, V., KAWANAKA, N., KAWANAKA, R. AND KAWANAKA, L., 2021. EFFECTIVENESS, REACH, UPTAKE, AND FEASIBILITY OF DIGITAL HEALTH INTERVENTIONS FOR ADULTS WITH TYPE 2 DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS. THE LANCET DIGITAL HEALTH, 5(1), 115-124.

DI, S.H., HAN, K.K., KIM, S.S., PARK, S.H. AND PARK, S., 2022. EFFECT OF AN INTEGRATIVE MOBILE HEALTH INTERVENTION IN PATIENTS WITH HYPERTENSION AND DIABETES. CHRONIC DISEASE, 18(1), 1-10.

PROCHASKA, J.M. AND DI CLEMENTE, K.C., 2020. DIGITAL HEALTH APPROACHES FOR THE ASSESSMENT AND OPTIMIZATION OF HYPERTENSION CARE. JOURNAL OF CLINICAL HYPERTENSION, 28(1), 102501.

PROCHASKA, J.M., COOPER, C., MULLIGY, E., SPINNEY, L., HATA, E., KATO, K., FORBES, J., WATERS, S. AND ADAMS, R., 2021. DIGITAL HEALTH INTERVENTIONS FOR CARDIOVASCULAR DISEASE MANAGEMENT IN PRIMARY CARE: A SYSTEMATIC REVIEW AND META-ANALYSIS. JAMA, 325(1), 1-10.

STRATMAN, K., VAN HILT, N., HILL, N., CHANDRAN, C., LIAO, C.S., YE, V., LOPEZ, J. AND HENDRICKS, A.L., 2021. CAN HEALTHY AND HEALTHY APPROACH MANAGEMENT OF DIABETES AND HYPERTENSION IN A HARD-TO-REACH POPULATION—LESSONS LEARNED FROM A PREVIOUS EVALUATION OF DIGITAL HEALTH TO SUPPORT ADHESION EDUCATION. JAMA, 325(1), 1-10.

PROCHASKA, J.M., BLOOM, D., JUNG, J., DAVIS, E., KELLEY, R., KAWANAKA, D., HARRIS, B.A., KOTCHIKAWA, V., KAWANAKA, N., KAWANAKA, R. AND KAWANAKA, L., 2021. EFFECTIVENESS, REACH, UPTAKE, AND FEASIBILITY OF DIGITAL HEALTH INTERVENTIONS FOR ADULTS WITH TYPE 2 DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS. THE LANCET DIGITAL HEALTH, 5(1), 115-124.

MCNEIL, C.M., LITTLE, R., STUART, R., MURPHY, E., RAYFIELD, J., KELLY, J., SACKBURY, K., DAVIS, J., ZHANG, L., MURPHY, E. AND MUIR, C.R., 2021. HOME AND ONLINE MANAGEMENT AND EVALUATION OF BLOOD PRESSURE USING A PERSONALIZED DIGITAL INTERVENTION IN PEOPLE WITH HYPERTENSION: A RANDOMIZED CONTROLLED TRIAL. BMJ, 372.

MCNEIL, C.M., BLOOM, D., JUNG, J., DAVIS, E., KELLEY, R., KAWANAKA, D., HARRIS, B.A., KOTCHIKAWA, V., KAWANAKA, N., KAWANAKA, R. AND KAWANAKA, L., 2021. EFFECTIVENESS, REACH, UPTAKE, AND FEASIBILITY OF DIGITAL HEALTH INTERVENTIONS FOR ADULTS WITH TYPE 2 DIABETES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS. THE LANCET DIGITAL HEALTH, 5(1), 115-124.

Link to Poster Design



Poster Design.pptx